

REMARKS/ARGUMENTS

Introduction

Claims 1-74 were pending in the present application before this amendment as set forth above. Among them, claims 1-24 were under examination, and claims 25-74 were withdrawn as being drawn to non-elected subject matter. By this amendment, claims 1 and 12 are amended, and new claims 75-81 are introduced. Now claim 1-24 and 75-81 are pending.

In the Office Action dated May 15, 2007, claims 1, 2, 5, 8 and 10 were rejected under 35 U.S.C. §102(b) as being anticipated by Anderson (US 20010036672) (hereinafter “Anderson”), and claims 1-4, 6 and 8-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Dodgson (US 20030107386) (hereinafter “Dodgson”).

Applicant appreciates the Examiner’s careful review of the application.

In response, without acquiescing to the assertions made therein, as set forth above, claims 1 and 12 have been amended. New claims 75-81 have been introduced to conform claims to the embodiments of the present invention and disclosed in the specification, as originally filed.

Supports for the amendment can be found in the disclosure, and particularly, for examples, in paragraphs of page 64, lines 1-7, and page 66, lines 6-20 of the specification and Figs. 5A, 5B and 5C of the drawings, as originally filed. Applicant submits that no new matter is added.

The following remarks herein are considered to be responsive thereto.

Claim Rejections under 35 U.S.C. §102

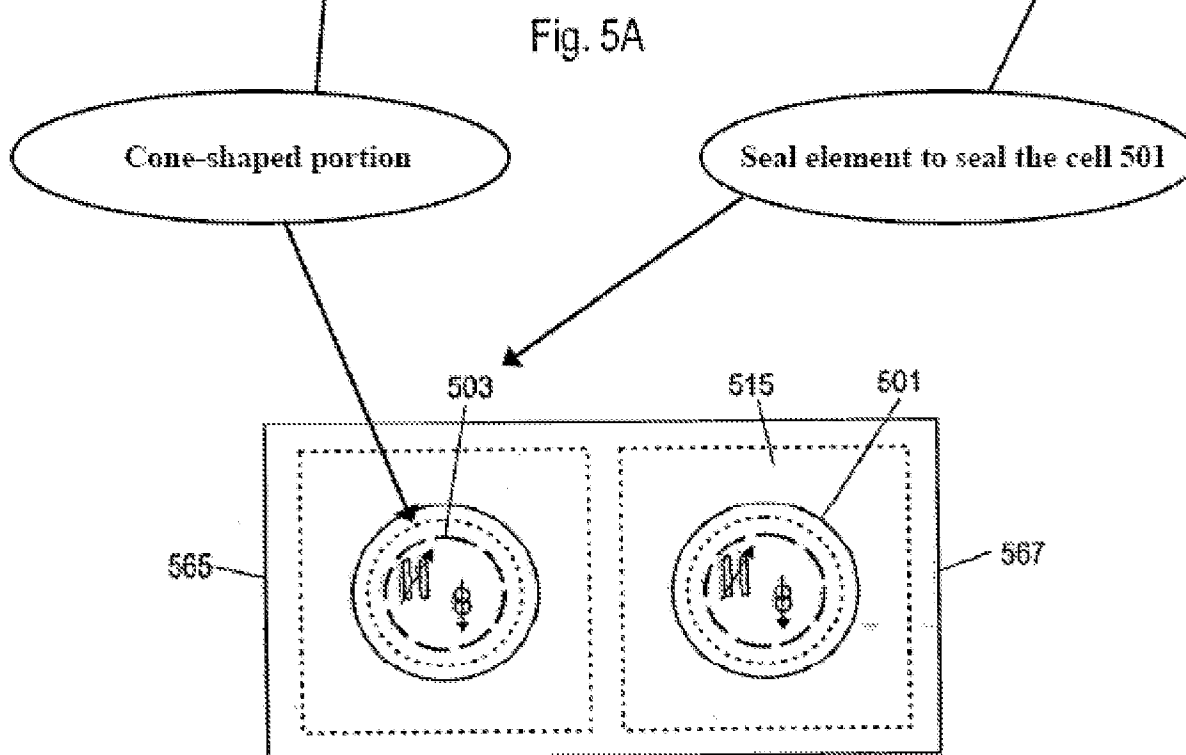
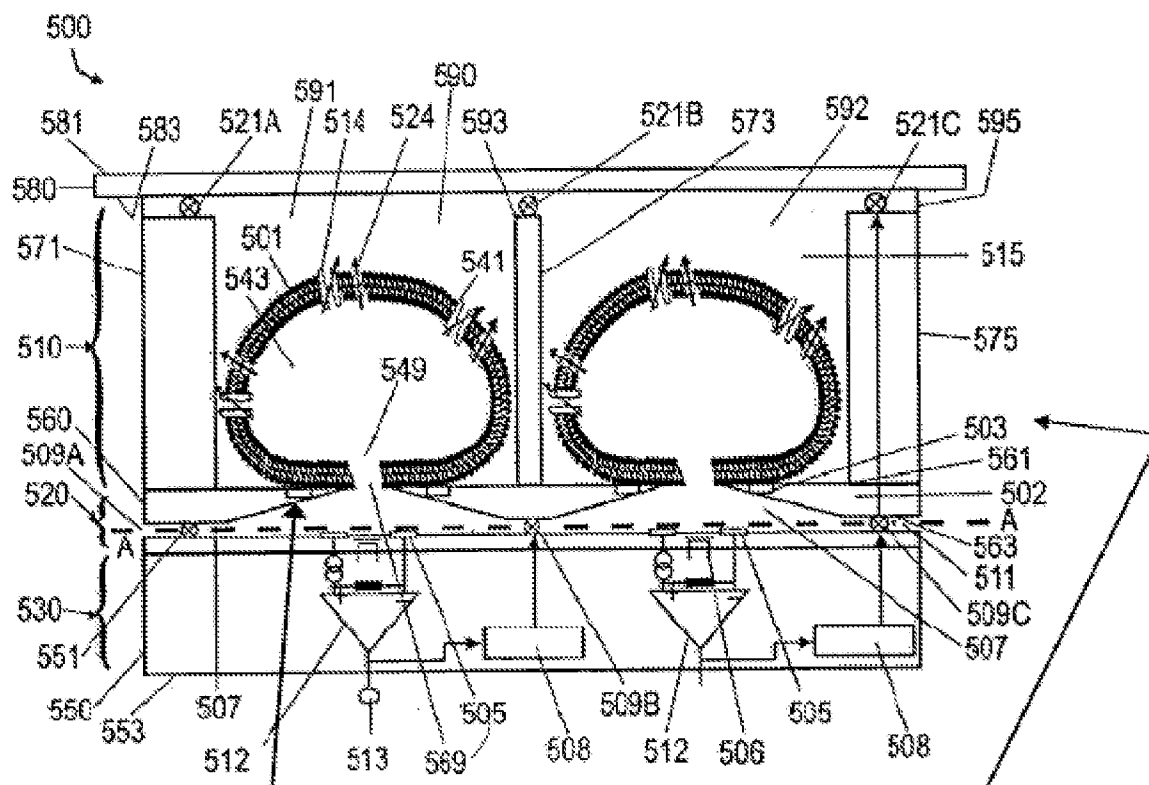
In the Office Action dated May 15, 2007, claims 1, 2, 5, 8 and 10 were rejected under 35 U.S.C. §102(b) as being anticipated by Anderson. Applicant submits that the amendment of claim 1 as set forth above makes the rejection moot. Moreover, applicant respectfully submits that claims 1 and 12, as amended, are patentable at least for the reasons set forth below:

1. Claim 1:

Amended claim 1, among other unique limitations, recites a device for monitoring status of at least one cell, wherein the cell has a membrane forming a substantially enclosed structure and defining an intracellular space therein, having

- “a. a first substrate having a first surface and an opposite second surface;
- b. a second substrate supported by the first substrate, the second substrate having a first surface, an opposite second surface, a body portion between the first surface and the second surface, a first side surface and an opposite second side surface, wherein the body portion defines a first passage between the first side surface and the second side surface and an opening on the first surface of the second substrate and in fluid communication with the first passage;
- c. sidewalls positioned above the first surface of the second substrate;
- d. a third substrate having a first surface and an opposite second surface, wherein the third substrate, the sidewalls and the second substrate define a chamber, and wherein the chamber is in fluid communication with a second passage defined by portions of the sidewalls and the third substrate;
- e. at least one sensor positioned in the first passage proximate to the opening; wherein the cell is positioned in the chamber and the intracellular space of the cell is in fluid communication with the first passage through the opening of the second substrate; and
- f. ***at least one seal element positioned on the second substrate and proximate to the opening for sealing the cell to the second substrate in operation.***” (Emphasis added.)

As disclosed in paragraphs of page 64, lines 1-7, and page 66, lines 6-20 of the specification and Figs. 5A, 5B and 5C of the drawings of the present application, several exemplary embodiments of a device for monitoring status of at least one cell, wherein the cell has a membrane forming a substantially enclosed structure and defining an intracellular space therein, are shown. According to the present invention as defined in amended claim 1, and as shown below,



for monitoring status of at least one cell, the cell needs to be in a stable position to be monitored, and at least one seal element positioned on the second substrate and proximate to the opening is utilized for sealing the cell to the second substrate in operation, which is not shown, taught or suggested by Anderson, or any other cited references.

For at least the foregoing reasons, independent claim 1, as amended, is patentable under 35 U.S.C. §102(b) over Anderson, or any other cited references.

Accordingly, amended claim 1 and claim 2-11 and new claims 75-77, which depend from now allowable amended claim 1, are patentable at least for the above reasons.

Applicant further submits that new claims 75-77 contain subject matters that are patentably different from Anderson, or any other cited references. For examples, new claim 75 recites that “the at least one seal element is formed and positioned to substantially encircle the opening”, and new claim 77 recites that “the body portion of the second substrate further defines an intersection portion where the first passage and the opening on the first surface of the second substrate are in fluid communication, and wherein the intersection portion is at least partially formed as a cone shaped portion,” none of the features are shown, taught or suggested by Anderson, or any other cited references.

Accordingly, claim 2-11 and new claims 75-77 carry more patent weight and should be allowed for these additional reasons.

2. Claim 12:

Amended claim 12, among other unique limitations, recites a device for monitoring status of a plurality of cells, wherein each cell has a membrane forming a substantially enclosed structure and defining an intracellular space therein, having

- “a. a first substrate having a first surface and an opposite second surface;
- b. a second substrate supported by the first substrate, the second substrate having a first surface, an opposite second surface, a body portion between the first surface and the second surface, a first side surface and an opposite second side surface, wherein the body portion defines a first passage between the first side surface and the second side surface and a plurality of

openings distributed on and over the first surface, each opening being in fluid communication with the first passage;

c. a third substrate having a first surface and an opposite second surface and spaced apart from the second substrate thereby defining a space between the second surface of the third substrate and the first surface of the second substrate;

d. a plurality of sidewalls positioned between the second substrate and the third substrate thereby partitioning the space between the second substrate and the third substrate into a plurality of chambers above the first surface of the second substrate such that only one of openings distributed on and over the first surface is located between the sidewalls of a corresponding chamber, wherein each chamber is in fluid communication with at least one neighboring chamber through a second passage defined by portions of the corresponding sidewalls and the third substrate;

e. a plurality of sensors positioned in the first passage, each sensor being proximate to a corresponding one of openings distributed on and over the first surface of the second substrate, wherein each cell is positioned in a corresponding one of the chambers and the intracellular space of each cell is in fluid communication with the first passage through the opening located between the sidewalls of a corresponding chamber; and

f. ***a plurality of seal elements positioned on the second substrate, each seal element is proximate to a corresponding one of the plurality of openings for sealing a corresponding cell to the second substrate in operation.***” (Emphasis added.)

Incorporating herein the reasons set forth above why amended claim 1 is patentable, applicant respectfully submits that independent claim 12, as amended, is patentable under 35 U.S.C. §102(b) over Anderson, or any other cited references.

Accordingly, amended claim 12 and claim 13-24 and new claims 78-81, which depend from now allowable amended claim 12, are patentable at least for the above reasons.

Applicant further submits that new claims 78-81 contain subject matters that are patentably different from Anderson, or any other cited references. For examples, new claim 78 recites that “each seal element is formed and positioned to substantially encircle its

corresponding opening”, and new claim 81 recites that “the body portion of the second substrate further defines a plurality of intersection portions where the first passage and the plurality of openings on the first surface of the second substrate are in fluid communication, respectively, and wherein each intersection portion is at least partially formed as a cone shaped portion,” none of the features are shown, taught or suggested by Anderson, or any other cited references.

Accordingly, new claims 78-81 carry more patent weight and should be allowed for these additional reasons.

Claim Rejections under 35 U.S.C. §103

In the Office Action dated May 15, 2007, claims 1-4, 6 and 8-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Dodgson. Applicant submits that the amendment of claims 1 and 12 as set forth above makes the rejection moot.

In particular, incorporating herein the reasons set forth above why amended claims 1 and 12 are patentable over Anderson, applicant respectfully submits that independent claims 1 and 12, as amended, is patentable under 35 U.S.C. §102(b) over Dodgson, or any other cited references.

Any amendments to the claims not specifically referred to herein as being included for the purpose of distinguishing the claims from cited references are included for the purpose of clarification, consistence and/or grammatical correction only.

It is now believed that the application is in condition for allowance at least for the reasons set forth above and such allowance is respectfully requested.

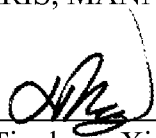
CONCLUSION

Applicant respectfully submits that the foregoing Amendment and Response place this application in condition for allowance. If the Examiner believes that there are any issues that can be resolved by a telephone conference, or that there are any informalities that can be corrected by an Examiner's amendment, please call the undersigned at 404.495.3678.

Respectfully submitted,

MORRIS, MANNING & MARTIN, LLP

August 15, 2007



Tim Tingkang Xia
Attorney for the Applicants on the Record
Reg. No.: 45,242

Morris, Manning & Martin, LLP
3343 Peachtree Road, N.E.
Atlanta, Georgia 30326-1044
Telephone: 404.233.7000
Customer No. 24728